

Darlingtonia

by

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I always thought it was difficult to grow *Darlingtonia* here in the Livermore valley because its so hot during the summer season. As most of you know, this plant needs cool roots in order to survive and this is the challenge for any grower to provide. In nature, the coolness comes from the water that emerges mostly from underground aquifers which we call springs. This water is cold, usually emerging from the ground at about 50 degrees F(10 degrees C). This water sometimes flows quite rapidly down a slope and slowly warms up in the sunshine until the temperature reaches about 65 degrees F(18 degrees C). At about this point the *Darlingtonia* plants disappear from the fen indicating that the water has reached a temperature that the roots cannot tolerate. When I say roots, I also refer to the stolons which the plant uses to reproduce itself from the mother plant. A healthy mother plant produces 3 to 5 of these each year. The terminal tip grows away from the source plant and when somehow it knows what the right distance is, the tip enlarges and grows into another full size plant. This stolon also produces roots to support the new plant. This process might also need cool soil conditions.

I also saw *Darlingtonia* growing by a lakeshore where the lake was located near the Oregon coast where it is cool and the water is at that temperature as well. The plants grew only about 4-6 inches(10-15cm) above the water line and about 3-4 feet(1 meter) from the water. It was easy to surmize that the soil was saturated with the cool lake water and the roots were surrounded with this coolness.

So, *Darlingtonia* would be easy to grow like *Sarracenia* if it didn't require the coolness around its roots. However, one additional property of *Darlingtonia* is that it loves water and plenty of it. In many places that I have seen it grow it seems to be a semi-aquatic plant sometimes floating on shagnum moss mats in flowing water. Other places, I have seen it partially submerged and looking good and healthy. The roots seem to like free flowing water and there is no danger of rotting the roots by submerging them for long periods of time in deep pools of water.

So my method for growing these plants involves plenty of water which I use to cool the plant roots as well as nourish its appetite for water. Essentially, I use 5-inch(13cm) pots for each plant and I use materials that will not easily go to mush in the presence of so much water. The bottom half of the pot is filled with perlite while the top half is filled with live sphagnum moss. The pot (usually I have about 5 or 6) is put into a large tray with the dimensions of 18 inches by 24 inches and 4 inches deep(45cm x60cm x10cm). I keep the water in this tray filled to the top at all times. A little less in winter with the tray about half-full.

Since my trays sit in an unheated greenhouse with the plastic roof allowing about 50% sunlight through, the water doesn't heat up as fast as it would if it was sitting outside in full sunlight. I also have good ventilation by a fan in the summer so heat doesn't build up. If you need to, you can fill 2-liter cola bottles with water and freeze

them and they can sit in the tray in the background keeping the tray water cool. I find that evaporation off the large surface area and a fan will keep the water at a cooler temperature that *Darlingtonia* seems to like. The cool nights here will cool the tray water even more. *Darlingtonia* can also be grown in large tubs such as deep dishpans made by Rubbermaid which could withstand the weather and sunshine over long periods of time. Again, I use perlite mostly for the soil and I hold it down from floating with a 3-4 inch(8-10 cm) layer of live sphagnum moss. I flood the tub with water and try to maintain some free water sitting on the surface. The tub sits in my yard and gets about 2 hours of east morning sun only with the rest of the day in shade. The plants are healthy and I will be getting some flowers soon for the 3rd year in a row.

I also have stolons which can be cut off and planted separately in a pot. These root and grow rapidly into mature plants-a lot faster than from seed.

Darlingtonia begins growing after *Sarracenia*s start growing here in early spring (about March). They seem to start a month later or so and all their pitchers for the season are produced in the spring. Flowers are also produced at this time as well. So, it is at this time that you should pay close attention to the needs of this plant because what you do to it now is important to what you will get later. The plant also goes dormant earlier than *Sarracenia* but its hard to tell because unlike its cousins, the pitchers remain green during the dormancy. Many of the pitchers are long-lived and frequently they survive not only the season but also into the following year when they begin to turn brown from the hood down and are easily replaced with new growth. The pitchers can also withstand some harsh weather conditions including freezing of the pitcher water.

If flowers are pollinated properly, seed is produced in October when the capsule changes color from green to light brown. Seed should be captured before the capsule splits open releasing most of the seed that falls to the ground. The seed can be stored in paper envelopes in the refrigerator until spring and are sown according to instructions by another member given here.

Darlingtonia Seeds

by

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Seeds of *Darlingtonia* are harvested at the end of September to mid-October and are stored in the refrigerator in plastic bags until spring. In the Spring, I use two methods of germination. First, I sow the seed on a peat-sand mix composed of 4 parts peat to one part sand#2 size. I sow the seed sometimes with and sometimes without Superthrive. I sprinkle seed on the surface of the peat-sand and water them very well. The other batch of seed are put in a solution of water and Superthrive (about 4 drops per cup of water) . I leave it this way until all the seed sinks to the bottom of the jar which usually takes about a week. I collect the seed through a strainer and then scrape the seed on the surface of the mixture of peat and sand. After putting the seeds on the peat & sand mixture. I set them in water about 3/4 full in full sunlight with 80% humidity. The seeds with Superthrive take about two weeks to germinate. The ones without Superthrive take a little longer about 3-4 weeks depending on your conditions in your growing area. You can also use live sphagnum moss to germinate the *Darlingtonia*